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BEACON
ARITHMETIC
BOOK TWO · PART ONE

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BEACON
ARITHMETIC
BOOK TWO   PART ONE

BY

C. M. FLEMING

Illustrated by

HERRY PERRY

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Foreword

THE Beacon Arithmetic Series is an outcome of the author's experience that if boys and girls are allowed access to the right kind of arithmetic, presented in the right way, the satisfaction of success will follow. It is preceded by three Infant Number Books, and a Number Reader designed to provide preliminary training in ability to read the language of arithmetic, and consists of four books which cover the syllabus recommended for Arithmetic in Primary Schools, Diagnostic and Survey Test Work Sheets, and a teacher's book of games, projects and supplementary exercises.

A thorough knowledge of the material offered in these books will be found to provide the experience necessary for the requirements of most examinations designed for entrants to Secondary Schools. Where pupils find difficulty with specific types of problems they may, following the suggestions in the Teachers' Manual, be encouraged to devise simple examples of similar structure.

The four pupils' books are addressed directly to girls and boys so that, with a minimum of oral instruction, a large amount of practice material is available. Their contents are so selected as to give approximately equal practice in all the items of the basic tables and in each of the combinations which recent investigations have shown to be involved in the attainment of mastery in computation, problem-solving and measurement.

The grading of the material is consequent upon an analysis of the mistakes which pupils commonly make in each process. Difficulties have been isolated, and much practice has been given to each so that every new step

may be mastered before complex and lengthy exercises are attempted. This provides a means both of consolidating what has been learnt and of increasing speed and certainty in the use of the fundamental processes.

Pupils differ in rate of learning, in freshness of attention, in health and in regularity of attendance. Their difficulties likewise vary, and the determination of their arithmetical needs is as important to the teacher as is diagnosis of their physical ailments to a doctor. Such diagnosis of weaknesses is facilitated by the arrangement of the material in chapters, at the end of each of which are five tests — three in the Pupil's Book, under the titles *A page to climb on*, *Pupils' own test*, *A page to race on*, and two additional tests in the form of work sheets. These tests are so organised that from the position of errors the necessary remedial practice may be rapidly ascertained and prescribed.

The content of each lesson is indicated clearly, and each chapter with revision and diagnostic tests is complete in itself. The chapters may, therefore, be taken in any order which fits the requirements of a local scheme of work. The books may also be used with equal facility whether the pupils work individually or in groups.

The teachers' book provides suggestions for arithmetical activities as well as for training in mathematical thinking. It is an integral part of the scheme and its exercises are so arranged as to facilitate class revision. They may with advantage be worked through systematically by the whole group, irrespective of the exact page in the Pupil's Book reached by each member. Their regular use has been found to result in more active responsibility by pupils, and greater interest on their part in the attainment of spatial knowledge and arithmetical skill.

Contents

TO EACH BOY AND GIRL

This book is made for you.

On some pages you will see the words :

A page to climb on

When you come to one of these pages, draw a picture of a ladder in your notebook, like this :

When you have finished your work on the page, count the sums in which you were wrong.

If you have no sums wrong, draw a little man on the top step of the ladder. Put him on the step marked 1 if you have one sum wrong, and so on. Try to keep him as high as you can.
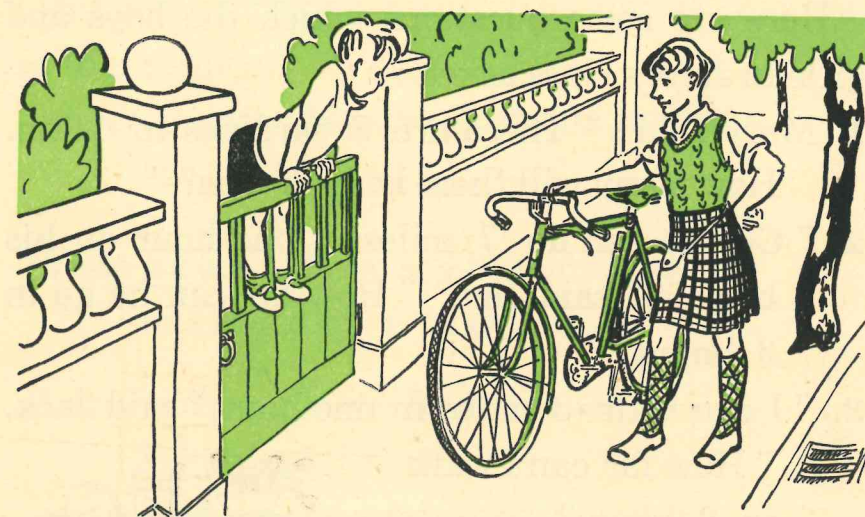
On some pages you will see the words :

A page to race on

On these pages see how many sums you can do in three minutes. Use a sand glass, if you have one, to measure the time. When you have a moment to spare, go back to these pages and try to do still more sums in three minutes.
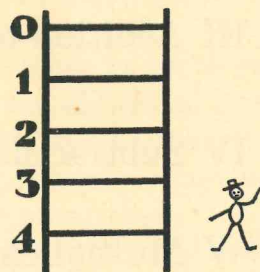
Chapter I   Multiplication

In this book you will read more about Tom and his friends who live in Beacon Street.

You have seen George once before.

Here he is with his bicycle. George asks questions like this :

" If I can ride 6 miles in one hour on my bicycle, how far can I go in 7 hours? "

He knows that such questions can be answered by multiplication.

You will like the pages of multiplication in this chapter.

Lesson 1 *Multiplying*

Here are some questions which the boys and girls in Jack's class asked:

1. Mary said: "There are 8 sardines in 1 tin. How many will there be in 2 tins?"

2. "George can do 7 miles in one hour on his bicycle," said Jim. "How far can he go in 3 hours?"

3. "I can walk 3 miles in one hour," said Jack. "How far can I walk in 2 hours?"

4. "If 4 buses pass our corner in 1 minute," said George, "how many would pass it in 3 minutes?"

5. "My puppy eats 9 biscuits every day," said Jean. "How many does he eat in 5 days?"

6. "Each of our windows has 8 panes of glass," said Jim. "How many panes are there in 2 windows?"

8
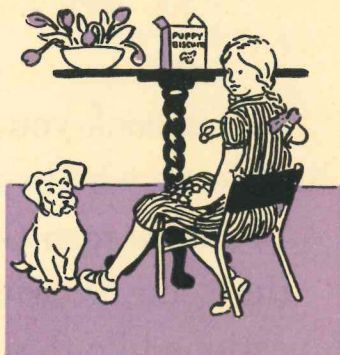
There are different ways of telling us that we are to multiply.

Sometimes numbers are written like this:

$$3 \times 5 = \qquad .$$

When we see this we say to ourselves:
"3 multiplied by 5 is equal to ."

Sometimes words are used like this:
What is 5 times 3?
What is the *product* of 3 and 5?

Both these questions mean that we are to multiply 3 by 5.

(The answer to a multiplication is often called the *product*. "Product" means the number produced by multiplying.)

1. $1 \times 6 = \quad .$
2. What is 3 times 7?
3. What is the product of 6 and 5?
4. What is 1 multiplied by 9?
5. What is the product of 2 and 8?
6. 4 multiplied by 6 is equal to .

5	6	3	4	6	5	9
8	6	8	8	7	6	9
40	36	24	32	42	30	81

4	5	5	6	9	6	3
8	6	8	7	9	6	8

3	3	6	5	5	4	6
9	8	6	7	8	8	7

6	5	5	2	9	3	4
7	3	8	4	5	7	2

3	9	5	7	3	7	6
4	9	6	5	8	4	6

4	4	5	9	7	9	5
8	5	9	3	3	9	6

9	8	8	8	7	7	9
8	4	5	8	6	7	4
72	32	40	64	42	49	36

8	8	7	9	8	7	9
5	8	7	4	4	6	8

8	9	7	9	7	8	8
8	5	6	8	7	5	4

9	7	3	5	7	9	3
9	4	9	6	7	4	7

7	6	6	9	4	8	5
6	6	7	4	8	8	9

8	5	9	7	3	8	5
5	7	8	3	8	4	8

$$
\begin{array}{ccccccc}
8 & 1 & 4 & 4 & 8 & 6 & 8 \\
9 & 1 & 7 & 9 & 6 & 8 & 9 \\
\hline
72 & 1 & 28 & 36 & 48 & 48 &
\end{array}
$$

1. $\begin{array}{c} 8 \\ 6 \\ \hline \end{array}$ 2. $\begin{array}{c} 4 \\ 9 \\ \hline \end{array}$ 3. $\begin{array}{c} 6 \\ 8 \\ \hline \end{array}$ 4. $\begin{array}{c} 8 \\ 9 \\ \hline \end{array}$ 5. $\begin{array}{c} 1 \\ 1 \\ \hline \end{array}$ 6. $\begin{array}{c} 4 \\ 7 \\ \hline \end{array}$ 7. $\begin{array}{c} 4 \\ 9 \\ \hline \end{array}$

8. $\begin{array}{c} 4 \\ 8 \\ \hline \end{array}$ 9. $\begin{array}{c} 6 \\ 8 \\ \hline \end{array}$ 10. $\begin{array}{c} 1 \\ 1 \\ \hline \end{array}$ 11. $\begin{array}{c} 8 \\ 6 \\ \hline \end{array}$ 12. $\begin{array}{c} 8 \\ 9 \\ \hline \end{array}$ 13. $\begin{array}{c} 8 \\ 8 \\ \hline \end{array}$ 14. $\begin{array}{c} 8 \\ 6 \\ \hline \end{array}$

15. $\begin{array}{c} 4 \\ 9 \\ \hline \end{array}$ 16. $\begin{array}{c} 8 \\ 9 \\ \hline \end{array}$ 17. $\begin{array}{c} 4 \\ 7 \\ \hline \end{array}$ 18. $\begin{array}{c} 1 \\ 1 \\ \hline \end{array}$ 19. $\begin{array}{c} 5 \\ 8 \\ \hline \end{array}$ 20. $\begin{array}{c} 9 \\ 8 \\ \hline \end{array}$ 21. $\begin{array}{c} 6 \\ 6 \\ \hline \end{array}$

22. $\begin{array}{c} 1 \\ 1 \\ \hline \end{array}$ 23. $\begin{array}{c} 3 \\ 8 \\ \hline \end{array}$ 24. $\begin{array}{c} 8 \\ 4 \\ \hline \end{array}$ 25. $\begin{array}{c} 6 \\ 8 \\ \hline \end{array}$ 26. $\begin{array}{c} 4 \\ 7 \\ \hline \end{array}$ 27. $\begin{array}{c} 7 \\ 7 \\ \hline \end{array}$ 28. $\begin{array}{c} 8 \\ 9 \\ \hline \end{array}$

29. $\begin{array}{c} 4 \\ 7 \\ \hline \end{array}$ 30. $\begin{array}{c} 6 \\ 7 \\ \hline \end{array}$ 31. $\begin{array}{c} 9 \\ 4 \\ \hline \end{array}$ 32. $\begin{array}{c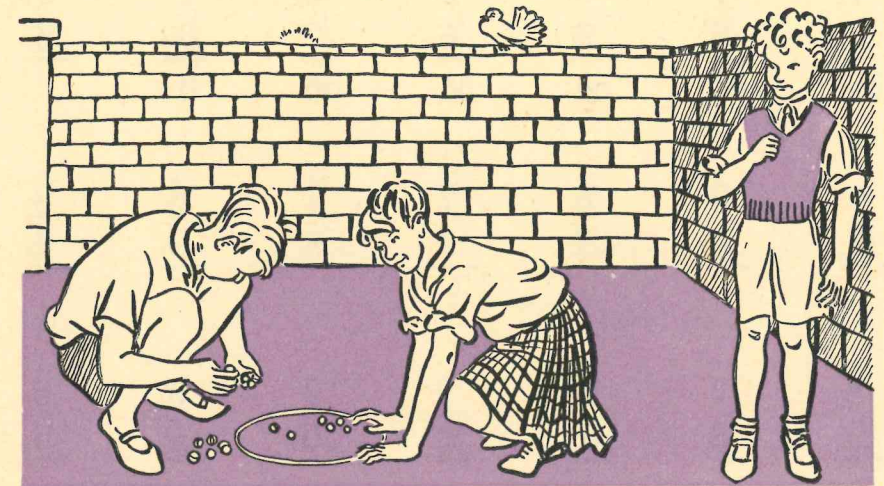} 9 \\ 9 \\ \hline \end{array}$ 33. $\begin{array}{c} 7 \\ 6 \\ \hline \end{array}$ 34. $\begin{array}{c} 5 \\ 6 \\ \hline \end{array}$ 35. $\begin{array}{c} 8 \\ 5 \\ \hline \end{array}$

1. Jack, Jim and George each bought a penny-worth of marbles. The marbles were 4 for a penny. How many did they get altogether?
2. Two other boys came to play with them. Each of the five boys put 4 marbles in the ring. How many were there in all?
3. At the end of the game there were only 18 marbles left. How many had been lost?
4. At bedtime Jim and Tom counted their marbles. Jim had 14 and Tom had 5. How many less had Tom than Jim?

Lesson 6

7	7	6	9	8	1	9
8	9	9	6	7	0	6
56	63	54	54	56	0	

1	9	8	7	7	6	8
0	6	7	9	8	9	7

8	7	1	9	7	9	8
5	8	0	6	9	4	6

7	4	8	7	8	4	6
9	7	9	8	4	9	9

6	7	9	9	1	8	8
9	8	6	8	0	7	8

6	6	7	1	7	7	1
8	9	6	1	9	7	0

Lesson 7

5	9	3	0	6	0	9
0	7	0	9	0	3	7
0	63	0	0	0	0	

6	0	0	9	5	3	9
0	9	3	7	0	0	7

3	5	6	0	0	7	0
0	0	9	3	9	8	3

9	1	8	5	7	9	1
7	1	9	0	9	7	0

6	3	9	0	4	5	8
0	0	6	9	9	0	7

8	6	4	3	6	0	6
6	0	7	0	8	3	0

1. Jean takes 5 minutes to walk to school. Jessie takes 7 minutes more than Jean. How long does Jessie take?
2. They saw Jack and Mary pass on the bus. They counted 5 windows on each side of the bus. How many was that altogether?
3. Jack likes to ride on the top of the bus. The bus stair has 9 steps. How many steps does Jack climb up in 6 rides?
4. The roof of the bus is 5 ft. 9 in. above the top deck. Jack is 4 ft. tall.
How far is the roof above Jack's head?
5. Mary is counting the days until the holidays. " It is three weeks. There are 7 days in a week. That makes 21 days," said Mary. Was that right?

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Lesson 8 *More multiplications*

8	9	0	2	0	0	9
0	0	6	0	4	2	0
0	0	0	0	0	0	

2	0	0	0	8	9	0
0	4	2	6	0	0	4

7	8	9	0	2	6	0
9	0	0	2	0	0	2

0	9	2	7	0	3	9
4	7	0	8	6	0	0

0	0	8	6	0	8	1
6	9	0	9	2	7	0

9	0	5	0	9	2	0
0	3	0	4	6	0	6

0	4	0	0	0	7	0
8	0	1	7	5	0	1
0	0	0	0	0	0	0

0	0	7	4	0	0	0
1	5	0	0	8	1	7

0	0	4	0	7	2	3
7	1	0	5	0	0	0

7	0	0	8	0	4	0
0	9	8	0	6	0	8

4	0	0	0	9	9	0
0	1	5	8	7	0	7

0	0	0	7	6	0	5
5	7	4	0	0	3	0

You remember how to write shillings and pence.

Write the words for : 3 d., 9 d., 11 d.

You know 12 pennies equal one shilling : 1 s. 0 d.

Whenever we have more than twelve pennies we turn them into shillings and pence.

We write fourteen pence as 1 s. 2 d., and we write 15 pence as 1 s. 3 d.

But we write eleven pence as 11 d. Can you tell why?

Jim's friends were collecting pennies for the hospital. They brought him the pennies and he wrote the amount down in shillings and pence.

Mary brought 23 pennies. How much was that?

Jack gave him 19 pennies. How much was that?

Jean got 12 pennies. How would he write that?

See if you can write correctly in shillings and pence all the pennies from 11 pence to 24 pence.

If you have written them correctly, you are ready to do the money sums on the next page.

Show your paper to your teacher.

```
s. d.
   8   Farthings
  6¼   Pence
1  2¼
```

Begin at the right-hand side.
Think ¼d. Write ¼d.
Think 14d. 14d. = 1s. 2d.
Write 1s. 2d.

Try these :

```
s. d.      s. d.      s. d.      s. d.
   9          9¼         9          7
   4          3          7          8½
1  1       1  0¼       1.4        1.3½
```

```
s. d.      s. d.      s. d.      s. d.
   2          4          6          2
   2          5½         3          1
   9          7          9          9
1.1        1.4½       1.6        1.0
```

```
s. d.      s. d.      s. d.      s. d.
   4          8          8          6½
   9¼         6          9          7
1.1¼       1.2        1.5        1.1½
```

```
s. d.      s. d.      s. d.      s. d.
  10          9          7          9
   9          5          5¾         6
```

Try to have more additions right today than you had yesterday.

```
s. d.      s. d.      s. d.      s. d.
   9          5          7          8
   7½         8          6          7
```

```
s. d.      s. d.      s. d.      s. d.
   3          7          6          6
   6          2¼         2          3
   8          6          9          7
```

```
s. d.      s. d.      s. d.      s. d.
   7          5          8¾         5
   7          9          8          7½
```

```
s. d.      s. d.      s. d.      s. d.
   8          5          5          7
   1          2          4          1
   5          8¾         8          5
```

Multiply :

5	1	7	9	6	1	9
8	0	8	4	9	1	8

4	5	6	7	3	0	9
9	0	6	9	8	6	7

2	4	0	0	8	0	8
0	8	9	8	9	3	5

0	0	8	6	6	5	6
1	4	4	7	0	6	8

4	0	9	8	8	9	7
7	7	9	7	6	0	6

On the next three pages is a test for you to do.
Work it right through to the end.

Multiply :

5	3	8	9	6	9	3
8	3	3	8	4	4	4

5	6	4	5	8	6	8
9	6	3	5	4	3	9

4	5	3	1	3	8	4
5	7	8	9	6	5	6

1	7	3	4	8	2	8
1	5	7	8	1	6	8

5	4	9	7	6	3	6
3	7	3	4	7	5	5

Multiply :

7	4	4	7	3	5	6
6	2	9	3	9	6	2

1	7	2	8	9	7	9
2	7	4	6	5	2	9

6	0	7	9	5	1	8
8	0	8	2	0	8	0

5	0	1	7	2	9	6
2	8	7	9	2	7	1

9	4	4	5	6	1	3
0	4	0	1	9	5	0

Multiply :

3	0	4	0	1	9	1
1	6	1	1	3	6	6

0	3	2	2	0	2	8
9	2	0	3	7	5	7

2	6	8	0	2	0	1
1	0	2	4	7	5	4

1	2	0	7	0	9	7
0	9	3	1	2	1	0

2	5
8	4

Learn over again any multiplication in which you have made a mistake.

On this page you are to multiply.
How many can you do in three minutes?

0 0	5 0	9 2	7 5	5 4	3 7	7 1
9 6	1 7	9 7	2 2	9 3	1 8	7 4
5 2	8 7	5 1	3 0	1 5	7 3	6 1
3 9	4 4	1 0	1 3	0 9	1 6	9 5
3 1	7 8	4 1	9 0	2 5	6 0	2 1

(Go on to the next page.)

On this page you are to multiply :

5 9	3 2	7 9	2 3	0 6	1 4	0 3
2 9	5 7	8 2	6 9	2 7	2 0	2 8
8 0	5 5	5 8	7 2	9 8	3 6	8 9
4 6	0 8	4 3	6 6	9 1	8 4	2 6
1 1	5 3	4 0	1 9	3 8	3 3	8 5

(Go on to the next page.)

On this page you are to multiply :

6	4	4	0	8	4	9
5	7	2	1	1	8	4

8	1	0	2	4	3	6
8	2	7	4	9	5	7

0	7	6	0	3	8	6
4	6	4	5	4	6	2

5	0	7	6	7	4	6
6	2	7	3	0	5	8

8	9
3	9

Show your paper to your teacher and ask if you may go on to the next chapter.

Chapter II   Division

Mary wanted lanterns for her birthday party. They cost 3 d. each. She had 21 pennies.

" That means I can buy 7," she said.

" How do you know? " said her little sister Meg.

" I've learnt to divide at school," said Mary.

This chapter will show you what she had learnt.

Perhaps your teacher will let you set up a toy shop and play at selling toys.

If you do so you must be able to divide, as well as add, subtract and multiply.

Lesson 12 *Problems*

We can find the answer by dividing, if we are asked a question like this :

"How many 3's are in 15?"

1. Mother put 15 cakes on 3 plates.

    How many would there be on each plate? We can find the answer by asking : "How many 3's are in 15?" The answer is 5.

2. Mary had 18 balloons. There were 9 boys and girls to share them. How many could each one get?

3. Her aunt baked 27 buns.

    How many was that for each of the 9 boys and girls?

4. Jack got 14 s. on his birthday. How many two-shilling books could he buy with it?

5. Mary also got 14 s. She spent 8 s. on chocolate for the party. How much had she left?

6. How many 2 s. boxes of chocolate could she get for 8 s.?

7. How many 3 s. books could she buy for 6 s.?

Words which tell us to divide

There are different ways of telling us to divide. Sometimes numbers are written like this :

$$4 \overline{)8}$$

Sometimes they are written like this :

$$8 \div 4$$

The mark $\div$ tells us that we are to divide. Sometimes we are asked :

How many 4's are in 8?

What is the *quotient* when 8 is divided by 4?

(When we divide, the answer is called the *quotient*. The word quotient means "how many".)

Now write the answers to these lines :

1. $24 \div 4 =$.

2. What is the quotient when 20 is divided by 4?

3. How many 9's are in 18?

4. Find the quotient when 14 is divided by 7.

5. 18 divided by 6 is equal to   .

6. How many 7's are in 35?

7. How many 3's are in 18?

8. Find the quotient when 16 is divided by 4.

Lesson 13 — *A puzzle with a key*

These multiplications are the key to the puzzle.

$7 \times 3 = 21.$ $5 \times 8 = 40.$ $3 \times 7 = 21.$

$9 \times 5 = 45.$ $6 \times 6 = 36.$ $7 \times 4 = 28.$

$5 \times 9 = 45.$ $3 \times 8 = 24.$ $3 \times 9 = 27.$

$5 \times 7 = 35.$ $4 \times 8 = 32.$ $6 \times 7 = 42.$

Here is the puzzle, and the way to answer it.
How many 7's are in 21? Look at the key.
The answer is 3 because 3 times 7 is 21.

1. How many 9's are in 45?
2. How many 5's are in 45?
3. How many 5's are in 35?
4. How many 3's are in 21?

5. How many 5's are in 40?
6. How many 6's are in 36?
7. How many 3's are in 24?
8. How many 4's are in 32?

9. How many 7's are in 28?
10. How many 3's are in 27?
11. How many 6's are in 42?

The same puzzle without a key

These questions are like those on the last page, but this time you must remember the key.

1. How many 3's are in 24?
2. How many 6's are in 36?
3. How many 6's are in 42?
4. How many 3's are in 27?

5. How many 5's are in 35?
6. How many 9's are in 45?
7. How many 7's are in 28?
8. How many 4's are in 32?

9. How many 3's are in 21?
10. How many 7's are in 21?
11. How many 5's are in 45?
12. How many 5's are in 40?

Try these new ones:

13. How many 5's are in 30?
14. How many 9's are in 81?
15. How many 9's are in 72?

On the next page you will see another way to write these questions.

Lesson 14

7) 21 means : " How many 7's are in 21 ? "

$$7) \underline{21} \qquad 9) \underline{45} \qquad 5) \underline{45}$$
$$\quad 3 \qquad\qquad 5 \qquad\qquad 9$$

$$5) \underline{35} \qquad 3) \underline{21} \qquad 7) \underline{28}$$
$$\quad 7 \qquad\qquad 7 \qquad\qquad 4$$

9) 45	3) 21	7) 21	5) 45	5) 35
5) 45	7) 28	5) 35	7) 21	3) 21
7) 28	9) 45	3) 21	4) 8	6) 30
7) 35	2) 8	7) 21	9) 27	5) 45
5) 35	3) 12	1) 2	4) 20	6) 18
4) 24	6) 24	7) 28	5) 15	9) 45

Lesson 15

$$3) \underline{27} \qquad 5) \underline{40} \qquad 6) \underline{36}$$
$$\quad 9 \qquad\qquad 8 \qquad\qquad 6$$

$$3) \underline{24} \qquad 4) \underline{32} \qquad 6) \underline{42}$$
$$\quad 8 \qquad\qquad 8 \qquad\qquad 7$$

5) 40	3) 24	3) 27	6) 36	4) 32
6) 42	6) 36	5) 40	3) 27	4) 8
4) 32	6) 42	5) 45	7) 21	5) 35
3) 24	9) 45	3) 27	3) 21	7) 28
2) 8	5) 40	3) 24	4) 32	6) 36
7) 35	3) 12	6) 42	4) 20	9) 27

Mary, Mary, quite contrary,
How does your garden grow?
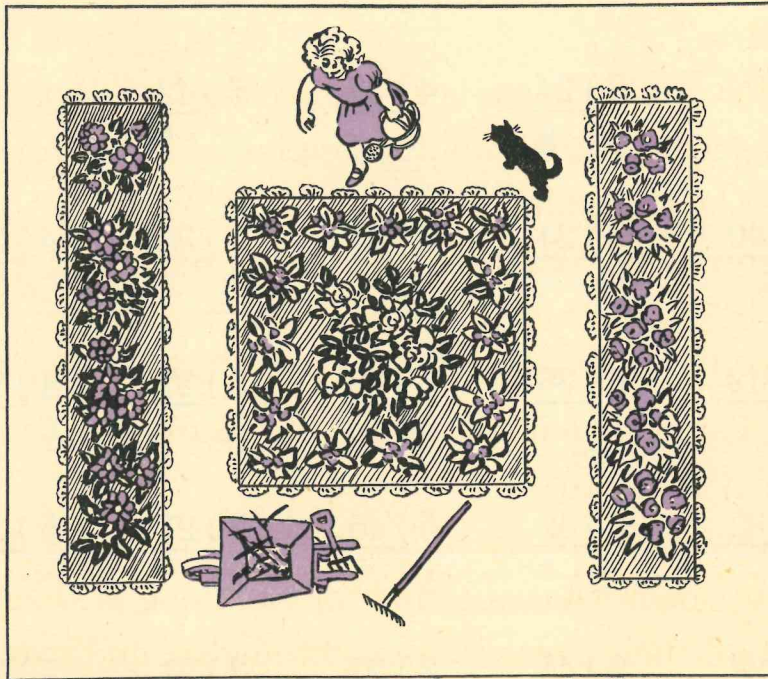
This is a picture of the flower-beds in Mary's garden seen from an aeroplane.

How many flower-beds can you see?

Take your ruler and measure the outside of the garden in the picture.

How many inches long are its sides?

Take your folded paper *right angle* (or a wooden one if you have one) and see how many right angles you can find in the flower-beds in Mary's garden.

How many flower-beds are *rectangles* in shape?

Remember that all the angles of a rectangle must be right angles.

Now take your ruler and measure the sides of the big flower-bed in the middle of the garden.

If all its corners are right angles and all its sides are the same length it is a *square*.

Is it a square?

Now measure the sides of the other beds, and write down what you find for each one of them.

If all their corners are right angles, and two of their sides are shorter than the other two sides, we call them *oblongs*.

Are they both oblongs?

Make a copy of the picture of Mary's garden. Measure each line carefully over again to be sure that you have made it the right length.

How many squares have you drawn?

Lesson 16 *Find the missing factor*

You know that a multiplication can be written like this: $3 \times 4 = 12$.

Here is a new name. The two numbers 3 and 4 which make 12 when they are multiplied together are called *factors* of 12.

In this lesson some of the *factors* have been missed out. Write each missing factor.

1. $8 \times = 40.$ $\quad 7 \times = 49.$ $\quad 1 \times = 1.$
2. $8 \times = 64.$ $\quad 9 \times = 36.$ $\quad 4 \times = 28.$
3. $7 \times = 42.$ $\quad 8 \times = 72.$ $\quad 8 \times = 48.$

4. $4 \times = 36.$ $\quad 7 \times = 63.$ $\quad 8 \times = 56.$
5. $6 \times = 48.$ $\quad 6 \times = 54.$ $\quad 1 \times = 0.$
6. $7 \times = 56.$ $\quad 9 \times = 54.$ $\quad 5 \times = 0.$

7. $9 \times = 63.$ $\quad 8 \times = 0.$ $\quad 4 \times = 0.$
8. $3 \times = 0.$ $\quad 9 \times = 0.$ $\quad 7 \times = 0.$
9. $6 \times = 0.$ $\quad 2 \times = 0.$ $\quad 9 \times = 45.$

10. $8 \times = 32.$ $\quad 9 \times = 81.$ $\quad 6 \times = 42.$

Turn to page 26. How many of the products can you find today in three minutes?

Lesson 17 *Divide again*

$5 \overline{)30} \quad 9 \overline{)81} \quad 9 \overline{)72} \quad 8 \overline{)32} \quad 8 \overline{)40}$
$6 \quad\quad 9 \quad\quad 8 \quad\quad 4 \quad\quad 5$

$8 \overline{)64} \quad 8 \overline{)40} \quad 9 \overline{)81} \quad 8 \overline{)32} \quad 5 \overline{)30}$
8

$9 \overline{)72} \quad 5 \overline{)30} \quad 8 \overline{)32} \quad 9 \overline{)81} \quad 8 \overline{)40}$

$6 \overline{)36} \quad 9 \overline{)72} \quad 8 \overline{)40} \quad 5 \overline{)30} \quad 9 \overline{)81}$

$8 \overline{)32} \quad 8 \overline{)64} \quad 3 \overline{)27} \quad 7 \overline{)21} \quad 3 \overline{)24}$

$9 \overline{)45} \quad 5 \overline{)40} \quad 5 \overline{)35} \quad 4 \overline{)32} \quad 8 \overline{)64}$

$7 \overline{)28} \quad 8 \overline{)64} \quad 6 \overline{)42} \quad 9 \overline{)72} \quad 3 \overline{)21}$

$45 \div 5 = .$ $\quad 24 \div 4 = .$ $\quad 25 \div 5 = .$

Lesson 18 *More divisions*

$$7\overline{)42} \quad 7\overline{)49} \quad 9\overline{)36} \quad 8\overline{)72} \quad 1\overline{)1}$$
$$6 \qquad 7 \qquad 4 \qquad 9 \qquad 1$$

$$4\overline{)28} \quad 9\overline{)36} \quad 8\overline{)72} \quad 7\overline{)42} \quad 4\overline{)28}$$
$$7$$

$$1\overline{)1} \quad 7\overline{)42} \quad 9\overline{)36} \quad 7\overline{)49} \quad 8\overline{)72}$$

$$9\overline{)72} \quad 1\overline{)1} \quad 7\overline{)42} \quad 9\overline{)36} \quad 4\overline{)28}$$

$$7\overline{)49} \quad 8\overline{)72} \quad 8\overline{)32} \quad 5\overline{)30} \quad 3\overline{)27}$$

$$8\overline{)40} \quad 9\overline{)81} \quad 6\overline{)42} \quad 8\overline{)64} \quad 5\overline{)40}$$

$$6\overline{)36} \quad 4\overline{)28} \quad 3\overline{)24} \quad 1\overline{)1} \quad 7\overline{)49}$$

$$32 \div 4 = \quad . \quad 72 \div 8 = \quad . \quad 7 \div 7 = \quad .$$

Lesson 19 *Problems again*

1. Jean's father is to be away for 21 days. How many weeks is that?
   (You know the number of days in one week.)
2. We have 28 days' holiday. How many weeks is that?
3. Jim wanted to make a table for Meg's doll's house. He found a piece of wood one foot long which he thought would do for the legs. How many 3 inch legs could he cut from it? (You know the number of inches in one foot.)
4. How many boys must give 3d. each in order to buy a shilling ball? (You know how many pence are in a shilling.)
5. 12 boys wanted to make 2 teams at rounders. How many boys would be in each team?
6. Jean is collecting 3d. bits. She has 9. How many pence is that?

Lesson 20 — *Addition of money*

s.	d.		
7	7	*Pence*	Begin at the right-hand side.
6	8		Think 15 d. 15 d. = 1 s. 3 d.
14	3	*Shillings*	Write 3 d. Remember 1 s.

Think

$$1 + 7 = 8, \text{ and } 8 + 6 = 14.$$

Write 14 s.

Try the next lines :

s.	d.		s.	d.		s.	d.		s.	d.
2	4		6	$5\frac{1}{2}$		1	6		7	9
8	9		5	8		6	7		9	$5\frac{3}{4}$

s.	d.		s.	d.		s.	d.		s.	d.
8	8		7	4		3	$9\frac{1}{4}$		8	6
3	5		4	$8\frac{1}{4}$		7	6		8	8

s.	d.		s.	d.		s.	d.		s.	d.
1	$7\frac{3}{4}$		4	9		6	8		8	8
9	6		9	$7\frac{1}{2}$		9	6		5	8

s.	d.		s.	d.		s.	d.		s.	d.
2	$3\frac{1}{4}$		2	9		5	10		2	$10\frac{3}{4}$
1	9		2	5		6	5		8	6

A page to climb on

Find the answers to the following additions :

s.	d.		s.	d.		s.	d.		s.	d.
2	$9\frac{1}{2}$		3	8		6	6		6	7
7	3		8	6		4	$6\frac{1}{4}$		3	7

s.	d.		s.	d.		s.	d.		s.	d.
8	8		8	5		3	7		4	$8\frac{3}{4}$
4	7		9	$9\frac{1}{2}$		7	8		5	4

s.	d.		s.	d.		s.	d.		s.	d.
1	8		4	9		3	$5\frac{1}{4}$		5	9
5	$7\frac{3}{4}$		5	6		9	7		9	9

s.	d.		s.	d.		s.	d.		s.	d.
7	$9\frac{1}{2}$		2	3		5	8		8	6
2	8		8	$9\frac{1}{2}$		7	8		7	$9\frac{3}{4}$

s.	d.		s.	d.		s.	d.		s.	d.
5	$6\frac{3}{4}$		8	$7\frac{1}{4}$		2	9		2	8
4	8		3	9		7	4		9	$9\frac{1}{4}$

Jessie goes shopping

Can you fill in the missing numbers?

1. Jessie's mother sent her to buy 8 d. worth of soap, and 5 d. worth of soap flakes. " I will need   ," said Jessie.
2. She bought 9 d. worth of chocolates, and 6 d. worth of toffee. " That cost me   ," said Jessie.
3. At the dairy, she got 7 d. worth of butter, and a bottle of milk at 3 d. " I paid   for them," said Jessie.
4. The morning paper costs 2 d. a day. " That comes to   for 6 days," said Jessie.
5. " My new paint box cost 8 d." said Jessie. " Some drawing paper cost me 4 d. That was   in all."
6. " Little cakes are 2 d. each," said Jessie. " I can buy   of them for 6 d."
7. " Oranges cost 3 d. each." " Six cost me   pence," said Jessie.

Lesson 21   *Dividing again*

$$4 \overline{)36} \qquad 8 \overline{)48} \qquad 6 \overline{)48} \qquad 7 \overline{)56} \qquad 7 \overline{)63}$$
$$\quad 9 \qquad\qquad 6 \qquad\qquad 8 \qquad\qquad 8 \qquad\qquad 9$$

$$6 \overline{)54} \qquad 7 \overline{)56} \qquad 8 \overline{)48} \qquad 6 \overline{)48} \qquad 4 \overline{)36}$$
$$\quad 9$$

$$6 \overline{)48} \qquad 4 \overline{)36} \qquad 7 \overline{)56} \qquad 8 \overline{)48} \qquad 7 \overline{)63}$$

$$9 \overline{)36} \qquad 7 \overline{)63} \qquad 6 \overline{)48} \qquad 4 \overline{)36} \qquad 6 \overline{)54}$$

$$8 \overline{)48} \qquad 6 \overline{)54} \qquad 1 \overline{)1} \qquad 7 \overline{)42} \qquad 8 \overline{)72}$$

$$4 \overline{)28} \qquad 7 \overline{)49} \qquad 9 \overline{)72} \qquad 5 \overline{)30} \qquad 8 \overline{)40}$$

$$9 \overline{)81} \qquad 7 \overline{)7} \qquad 7 \overline{)56} \qquad 8 \overline{)32} \qquad 7 \overline{)63}$$

$$64 \div 8 =   . \quad 40 \div 5 =   . \quad 54 \div 6 =   .$$

Lesson 22 — *More divisions*

$9\,)\,\overline{54}$ — 6	$8\,)\,\overline{56}$ — 7	$1\,)\,\overline{0}$ — 0

$5\,)\,\overline{0}$ — 0	$9\,)\,\overline{63}$ — 7	$3\,)\,\overline{0}$ — 0

$9\,)\,\overline{63}$	$9\,)\,\overline{54}$	$5\,)\,\overline{0}$	$1\,)\,\overline{0}$	$8\,)\,\overline{56}$
$1\,)\,\overline{0}$	$6\,)\,\overline{48}$	$9\,)\,\overline{54}$	$8\,)\,\overline{56}$	$9\,)\,\overline{63}$
$5\,)\,\overline{0}$	$3\,)\,\overline{0}$	$4\,)\,\overline{36}$	$6\,)\,\overline{54}$	$7\,)\,\overline{56}$
$8\,)\,\overline{56}$	$8\,)\,\overline{48}$	$9\,)\,\overline{54}$	$7\,)\,\overline{63}$	$5\,)\,\overline{0}$
$3\,)\,\overline{0}$	$1\,)\,\overline{0}$	$7\,)\,\overline{42}$	$9\,)\,\overline{63}$	$7\,)\,\overline{49}$
$9\,)\,\overline{36}$	$8\,)\,\overline{72}$	$1\,)\,\overline{1}$	$4\,)\,\overline{28}$	$3\,)\,\overline{0}$

Lesson 23 — *Divide on this page*

$6\,)\,\overline{0}$ — 0	$8\,)\,\overline{0}$ — 0	$9\,)\,\overline{0}$ — 0	$2\,)\,\overline{0}$ — 0	$4\,)\,\overline{0}$ — 0
$7\,)\,\overline{0}$ — 0	$9\,)\,\overline{0}$	$8\,)\,\overline{0}$	$6\,)\,\overline{0}$	$7\,)\,\overline{0}$

$9\,)\,\overline{0}$	$6\,)\,\overline{0}$	$2\,)\,\overline{0}$	$8\,)\,\overline{0}$	$4\,)\,\overline{0}$
$7\,)\,\overline{0}$	$2\,)\,\overline{0}$	$9\,)\,\overline{63}$	$9\,)\,\overline{0}$	$4\,)\,\overline{0}$
$6\,)\,\overline{54}$	$7\,)\,\overline{0}$	$9\,)\,\overline{54}$	$5\,)\,\overline{0}$	$4\,)\,\overline{32}$
$1\,)\,\overline{0}$	$8\,)\,\overline{48}$	$3\,)\,\overline{0}$	$6\,)\,\overline{0}$	$6\,)\,\overline{48}$
$7\,)\,\overline{7}$	$8\,)\,\overline{0}$	$8\,)\,\overline{56}$	$2\,)\,\overline{0}$	$7\,)\,\overline{56}$

$0 \div 4 =$. $36 \div 4 =$. $63 \div 7 =$.

Lesson 24 — *Words telling us to divide*

Here is another way of telling us to divide:

Instead of saying, "How many 4's are in 8," or "What is 8 divided by four?" we can say:

What is $\frac{1}{4}$ of 8?

We read it:

"What is one-fourth of 8?" The answer is 2.

Write the answers to the divisions on this page. You know them quite well, but some of them are written in the new way.

1. What is $\frac{1}{3}$ of 15?   What is $\frac{1}{5}$ of 10?
2. What is $\frac{1}{4}$ of 12?   What is $\frac{1}{5}$ of 15?
3. What is $\frac{1}{2}$ of 18?   What is $\frac{1}{4}$ of 16?
4. $28 \div 4 =$. $20 \div 5 =$. $16 \div 2 =$

5. $\frac{1}{3}$ of 18 is   . $\frac{1}{5}$ of 25 is   .
6. $\frac{1}{4}$ of 20 is   . $\frac{1}{3}$ of 21 is   .
7. $\frac{1}{2}$ of 14 is   . $\frac{1}{4}$ of 24 is   .
8. $45 \div 5 =$. $36 \div 4 =$. $12 \div 2 =$.

9. Write the missing factors:

$5 \times \quad = 30. \quad 2 \times \quad = 10. \quad 3 \times \quad = 24.$

Lesson 25 — *A page to climb on*

$7\overline{)0} \qquad 3\overline{)27} \qquad 5\overline{)35}$

$5\overline{)40} \qquad 7\overline{)63} \qquad 9\overline{)72} \qquad 3\overline{)0} \qquad 8\overline{)72}$

$6\overline{)36} \qquad 6\overline{)54} \qquad 8\overline{)32} \qquad 6\overline{)0} \qquad 1\overline{)1}$

$3\overline{)24} \qquad 9\overline{)54} \qquad 8\overline{)40} \qquad 8\overline{)0} \qquad 4\overline{)28}$

$4\overline{)32} \qquad 8\overline{)56} \qquad 8\overline{)64} \qquad 9\overline{)0} \qquad 4\overline{)36}$

$6\overline{)42} \qquad 1\overline{)0} \qquad 7\overline{)42} \qquad 2\overline{)0} \qquad 8\overline{)48}$

$5\overline{)30} \qquad 5\overline{)0} \qquad 7\overline{)49} \qquad 4\overline{)0} \qquad 6\overline{)48}$

On the next two pages is a test for you. Work it right through to the end.

9) 9	7) 21	8) 24	6) 36	5) 15
8) 32	3) 9	9) 45	3) 18	3) 24
4) 8	8) 40	5) 25	5) 45	2) 12
4) 32	2) 8	8) 64	4) 12	5) 35
6) 30	6) 42	3) 12	7) 42	1) 9
3) 21	1) 2	5) 30	4) 20	7) 49
8) 8	7) 28	6) 24	9) 81	7) 35
9) 36	3) 15	3) 27	6) 18	9) 72
9) 27	8) 72	6) 12	5) 40	4) 24

1) 1	2) 10	9) 54	2) 18	9) 0
7) 7	4) 28	1) 4	8) 56	5) 20
2) 0	5) 10	4) 36	2) 16	1) 0
1) 8	4) 0	4) 16	8) 48	9) 18
5) 0	6) 6	7) 0	4) 4	6) 48
2) 4	9) 63	3) 3	1) 7	2) 6
7) 56	1) 5	3) 0	3) 6	5) 5
2) 14	7) 63	1) 6	6) 0	8) 16
1) 3	7) 14	6) 54	2) 2	8) 0

Learn over again any division in which you have made a mistake.

7) 49	1) 7	7) 56	1) 5	3) 0
3) 3	9) 36	5) 5	7) 63	1) 6
6) 0	3) 6	8) 72	1) 3	6) 54
2) 2	8) 0	8) 16	1) 1	2) 10
9) 54	2) 18	9) 0	7) 7	4) 28
1) 4	8) 56	5) 20	2) 0	5) 10
4) 36	2) 16	1) 0	1) 8	4) 0
4) 16	8) 48	9) 18	5) 0	6) 6
7) 0	4) 4	6) 48	2) 4	9) 36

2) 6	3) 21	8) 8	4) 20	6) 24
5) 30	2) 14	7) 28	3) 15	7) 35
6) 18	9) 81	7) 14	3) 27	6) 12
9) 27	4) 24	9) 72	9) 9	5) 40
8) 24	7) 21	5) 15	8) 32	3) 9
6) 36	3) 18	9) 45	4) 8	8) 40
5) 25	3) 24	2) 12	5) 45	2) 8
8) 64	4) 12	4) 32	6) 30	5) 35
3) 12	7) 42	1) 9	6) 42	1) 2

Ask your teacher if you may go on to the next chapter.

The postman says that he carried 288 letters in the morning, and 293 in the afternoon.

Tom wonders how many that was in all.

He thinks he will ask his brother Jim, because Jim gets big additions to do at school.

In this chapter you will find some of them.

Perhaps your teacher will let you set up a post-office and sell stamps. To do it well you must be able to work all kinds of sums very quickly.

Lesson 26   *Names for numbers*

Fill in the missing numbers in these lines :

1. The number we write for sixteen is   16 .
2. The number we write for sixty-one is   61 .
3. Five hundred and fifteen is written : 515 .
4. Nine hundred and ninety is written : 990 .
5. Six hundred and six is written : 606 .

We have a special name for ten bundles of hundreds. We call them *one thousand*, and we write it : 1,000. Notice that we put a comma between the thousands and hundreds columns when we write the number alone.

Two thousand is written : 2,000.

Three thousand is written : 3,000.

6. Five thousand is written :
7. Seven thousand is written :   .

We often have to write numbers like
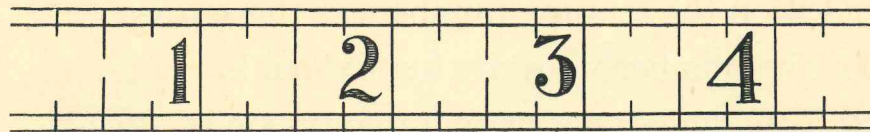
four thousand three hundred and forty-six.

This is the way to do it : 4,346.

Now write the numbers for :

8. Six thousand seven hundred and seventy-two.
9. Nine thousand eight hundred and fifty-three.

Lesson 27 *Length*

If you do not remember about lengths, turn back to pages 56, 57, 83 and 97 in Book One, Part Two.

1. (a) How many inches are in one foot? 12
   (b) 14 inches are the same as 1 ft. 2 in.
   (c) How many inches equal 1 ft. 5 in.? 17

2. (a) How many quarter inches are in one inch? 4
   (b) How many half-inches are in one inch? 2
   (c) We write three-quarters of an inch : $\frac{3}{4}$.

3. (a) Draw a line $2\frac{1}{2}$ in. long.
   (b) Below it draw a line $3\frac{1}{4}$ in. long.
   (c) Draw another line $2\frac{3}{4}$ in. long.

4. Find the difference between :

ft.	in.	ft.	in.	ft.	in.	ft.	in.
2	7	2	$9\frac{1}{2}$	4	5	2	$8\frac{1}{2}$
1	4		5	1	5	2	0
1	3	2	$4\frac{1}{2}$	3	0	0	$8\frac{1}{2}$

Show your answers to your teacher.

We add feet and inches in just the same way that we add shillings and pence.

ft.	in.	ft.	in.	ft.	in.	ft.	in.
3	$10\frac{1}{2}$	8	8	6	11	4	7
	6	2	9	4	3	1	$5\frac{1}{2}$
4	$4\frac{1}{2}$	11	3	11	2	6	$0\frac{1}{2}$

ft.	in.	ft.	in.	ft.	in.	ft.	in.
2	$5\frac{3}{4}$		10	7	$9\frac{1}{2}$	4	11
1	11	6	$8\frac{1}{4}$	3	3	4	7

ft.	in.	ft.	in.	ft.	in.	ft.	in.
5	2	6	8	3	10	8	7
2	10	3	$6\frac{3}{4}$	7	4	3	9

ft.	in.	ft.	in.	ft.	in.	ft.	in.
1	9	4	10		7	7	1
7	8	9	9	3	$11\frac{3}{4}$	4	10

ft.	in.	ft.	in.	ft.	in.	ft.	in.
4	$11\frac{1}{4}$	4	8	3	3	1	8
8	6		$11\frac{1}{4}$	2	10	8	8

Lesson 28   *Adding again*

1. Begin with 23. Add 7 to it. Go on adding 7 to each answer until you reach 86.
2. Try this one : Begin with 41, and add six to it. Then add 6 to your answer until you reach 95.
3. Begin with 16, and add 8. Keep on adding 8 to your answer till you reach 96.
4. How quickly can you do this one? Begin with 28. Add 7 to each answer till you reach 91.
5. This one is easier : Begin with 27 and add 9 to it. Keep on adding 9 till you reach 108.

You know the answer to this sum : $7 + 8 =$.
One way to answer it is to say :

" Seven *plus* eight is equal to 15."

The word *plus* means that we are to add.

1. What is 2 plus 8 equal to?
2. What is the sum of 3 and 6 ?
3. Find the total when I add 8 and 8.
4. $5 + 5 =$.
5. Add 7 and 6.
6. 9 plus 5 is equal to   .

1. The first postman on Christmas Eve brought 8 letters with halfpenny stamps, and 3 postcards with penny stamps.
   What was the value of all these stamps?
2. The second postman brought 4 letters with halfpenny stamps, and 5 postcards with penny stamps. What was the value of all these stamps?
3. The postman went to 28 houses on one side of the street, and to 29 houses on the other side. How many houses was that in all?
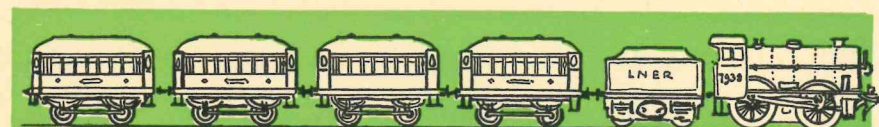
4. Tom was given a steam train as a present. Each of the 4 carriages was 1 ft. 2 in. long. What was the length of all the carriages?
5. Jack bought cards to send to his 5 friends. Each card cost 2 d. How much money did he need?
6. Make up a question about the number of stamps you might need at Christmas to send cards to your friends.

Add on this page

269	346	235	424	122
289	278	368	288	498
558	624	603		

146	269	158	169	268
355	443	676	252	393

528	415	279	387	544
272	399	285	416	269

309	289	58	358	469
396	287	399	344	75

455	268	154	179	37
257	468	476	379	383

645	257	75	173	327
87	388	435	269	475

Adding again

345	896	431	756	427
230	834	414	979	151
575	1730	845		

918	951	872	622	859
292	45	379	331	996

656	132	989	578	401
886	352	941	787	586

186	507	497	146	274
212	152	684	801	602

957	506	131	427	336
466	500	731	883	985

32	636	500	285	598
464	877	379	702	967
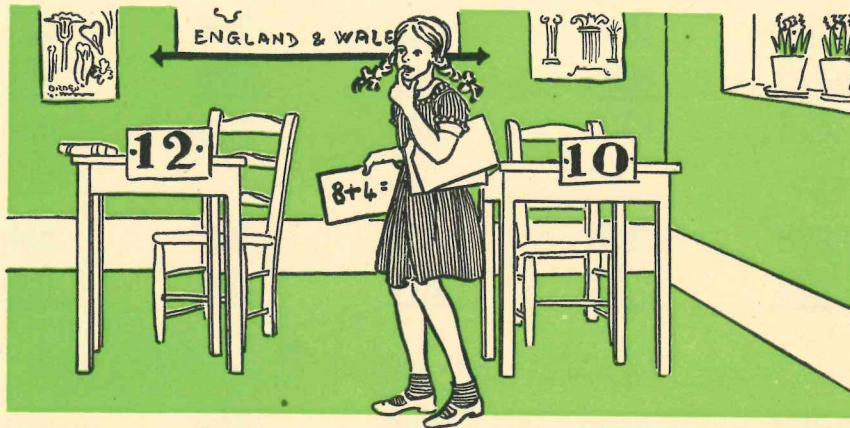
The class is divided into two teams to play at Postman. Mary is the Postman.

She must " sort " a packet of question-answer cards as fast as she can. She holds up each card so that the class can read it and then puts it on the desk which is marked with the number which gives the right answer.

The Postman wins a mark for her team for each letter she " delivers " correctly.

The rest of the class are " Inspectors " and put up their hands to stop her if she makes a mistake.

You and your friends can play this game.

Lesson 31   *Something new*

These marks (   ) round numbers mean that the numbers are to be taken together.

$(4 + 4) + 1$ means, " Add 4 and 4, and then add 1 to the answer."

Here is another : $(4 + 2) + 9$.

We think   6, add 9, and write 15.

$(3+1)+6=$.	$(6+3)+7=$.	$(2+3)+9=$.
$(4+3)+8=$.	$(1+5)+7=$.	$(2+4)+9=$.
$(1+4)+7=$.	$(6+3)+8=$.	$(3+5)+5=$.
$(7+1)+9=$.	$(3+2)+9=$.	$(5+1)+8=$.
$(3+4)+3=$.	$(2+6)+7=$.	$(8+1)+7=$.
$(3+5)+6=$.	$(2+3)+6=$.	$(3+1)+7=$.
$(6+0)+5=$.	$(6+3)+3=$.	$(2+3)+8=$.
$(3+4)+8=$.	$(2+3)+7=$.	$(3+5)+9=$.
$(5+1)+8=$.	$(3+5)+9=$.	$(6+2)+7=$.
$(2+2)+6=$.	$(4+5)+0=$.	$(2+3)+9=$.
$(4+4)+5=$.	$(2+7)+6=$.	$(3+4)+9=$.
$(3+0)+7=$.	$(1+1)+6=$.	$(2+6)+7=$.
$(6+1)+9=$.	$(2+1)+9=$.	$(7+0)+8=$.
$(7+2)+6=$.	$(1+2)+8=$.	$(1+8)+5=$.

Lesson 32 *Addition*

These sums look different, but they are the same as those you have been doing. Remember to add from the top number downwards.

53	76	45	38	24	26
35	13	33	41	10	41
6	45	66	76	79	85
94	134	144			

22	42	43	23	26	43
26	43	24	50	43	15
99	87	64	88	72	63

17	12	34	4	14	41
12	42	21	23	5	48
73	76	56	93	99	54

12	2	35	33	33	56
52	36	34	4	13	32
59	76	48	66	67	75

A page to climb on

52	31	15	9	15	71
3	28	40	50	73	3
98	97	88	53	93	48

1	22	55	13	53	66
56	41	22	10	15	13
89	37	59	89	78	82

47	21	12	24	32	13
2	31	57	45	40	61
96	69	72	48	39	67

47	24	6	13	13	56
31	52	20	16	76	30
79	96	85	73	54	79

27	23	22	42	51	25
20	4	15	13	13	52
78	93	66	76	59	59
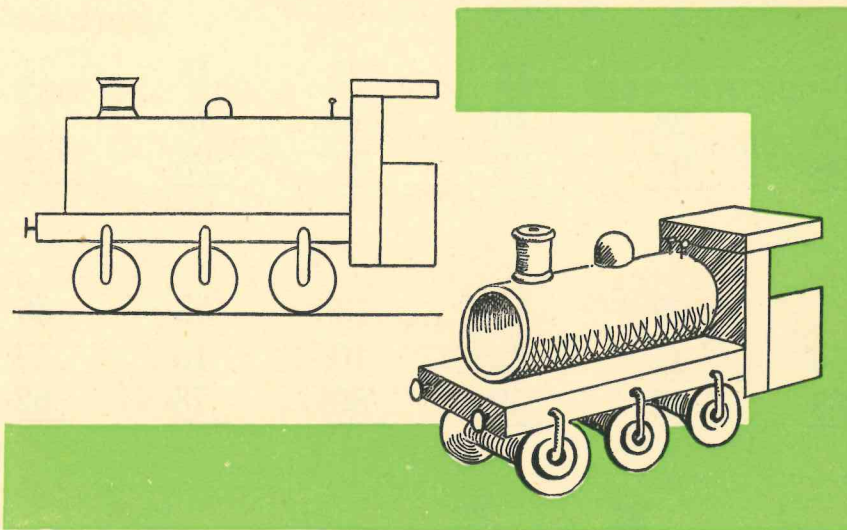
The boys in Tom's school made this engine out of old box lids and empty reels.

Measure the rectangles and draw a picture of the engine. Be careful to get the wheels quite round like this : ◯ Each wheel must be a *circle* or the engine will not run properly.

Perhaps you can draw a picture of a bus or a motor car. Measure as many rectangles as you can in your drawing and write down how many of them are square in shape.

Be careful about the wheels. Remember they must be *circles*.

297	201	985	500	503
898	103	699	99	463
1195	304	1684		
957	296	816	682	944
789	203	798	7	597
120	675	897	239	885
670	987	545	760	465
443	510	301	155	433
240	180	301	131	23
728	489	366	935	889
214	852	444	355	102
23	41	302	404	470
766	805	367	369	952
211	424	201	734	408
480	100	301	220	240
973	590	481	103	402

You remember what is meant by $\frac{1}{2}$ inch.

It means that we have divided an inch into 2 equal parts and are thinking of one of them.

1. Here is an oblong 1 inch long. Copy it and shade $\frac{1}{2}$ of it black.
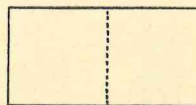
2. Here is a circle divided into 3 equal parts. Copy it and shade $\frac{1}{3}$ of it black.
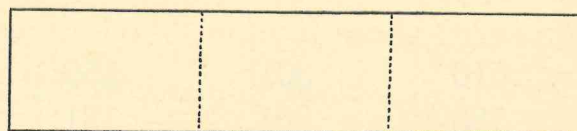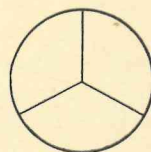
3. Here is a rectangle 3 inches long. Copy it and shade $\frac{1}{3}$ of it black.
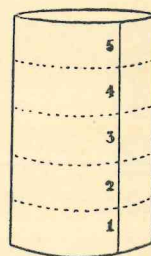
4. This jar is marked off into 5 equal parts. Jean filled $\frac{1}{5}$ of the jar with ink. Draw the jar and show how far up the ink came.

5. Draw this box, and mark off $\frac{1}{4}$ of its front with dots. Draw a picture in that quarter.
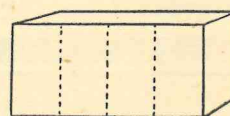
23	12	823	732
45	66	44	117
95	69	846	151
14	13	636	521
71	51	203	321
78	57	370	498
32	54	429	745
24	30	160	155
88	59	530	200
13	94	212	625
33	8	121	244
79	50	948	971
36	23	445	531
41	36	222	221
78	74	263	369

Add :

43	20	53	207
42	6	333	280
45	74	544	659
341	78	722	166
41	11	12	111
18	83	679	862
53	24	335	234
35	13	513	31
28	66	639	454
65	40	152	422
22	15	316	202
97	76	787	758
20	52	314	301
32	12	541	592
69	58	789	307

| Lesson 32 | Lesson 32 | Lesson 33 | Lesson 33 |

A page to race on

On this page you are to add.

How many sums can you do in three minutes?

36	13	732	143
11	22	20	324
85	66	368	893
30	35	123	405
9	34	234	144
88	82	522	887
33	50	312	214
23	23	211	270
74	37	589	964
56	42	511	21
21	41	218	515
87	99	173	729
30	12	217	554
57	7	101	304
96	81	644	865

Ask your teacher if you may go on to the next chapter.

Chapter IV
Subtraction

Jack went for his holiday to the seaside.

One day he saw a steamer.

A sailor told him that 47 people came off the steamer.

"There were 235 people on it when it arrived," said the sailor. "Do you know how to find out how many are left?"

"Yes," said Jack, "I could find it out by subtracting 47 from 235."

This chapter will show you how to do big subtractions like that.

You know that we subtract to find the answer in problems which ask: What has been spent? How much more is needed? What is left?

The word *minus* tells us to subtract.

We can write a subtraction: $12 - 9 = $.

We read it: "Twelve minus nine equals ."

1. Jean and Mary were trying to skip without stopping. Mary skipped 24 times and Jean skipped 35 times. How many more times did Jean skip?

2. Jack ran 90 yards. Then he ran 98 yards more. How far did he run altogether?

3. There are 60 minutes in 1 hour. Mary has to practise at the piano for one hour. She has done 10 minutes. How many more minutes must she practise?

4. We get our holidays on March 31st. It is March 25th to-day. How many more days have we at school?

Something to do

From the box of coins count out 24 pennies. You know that 24 pennies make two shillings. We can write *two shillings* in two ways :

2 s. 0 d.   or   2/-
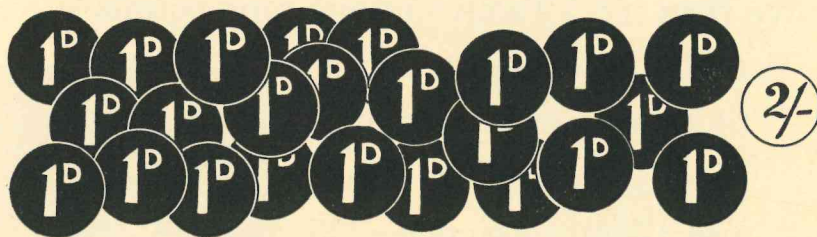
One shilling and sixpence can be written : 1/6.

Now finish this page, using your coins if you need them.

1. 2 pennies away from 2/- leaves   s.   d.
2. 1/2 − 4 d. =   .   1/4 minus 5 d. =   .
3. 2/- − 1/2 =   .   2/- minus 1/3 =   .
4. What is 10 d. less than 1/6 ?
5. What is the difference between 1/5 and 11 d.?
6. By how much is 9 d. less than 1 s. 3 d.?
7. What is left if I had 2/- and spent 1/5 ?
8. Find the difference between 1/4 and 8 d.
9. Take 1/4 from 2/-.   1/6 minus 8 d. =   .

1. From 1/7 take 8 d.
2. What is left if I have 1/5 and spend 10 d.?
3. Find the difference between 1/7 and 11 d.
4. By how much is 9 d. less than 1/8 ?

5. What must be added to 8 d. to make 1/- ?
6. 3 d. from 1/1 makes   .
7. Subtract 10 d. from 1/9.
8. Take 11 d. from 1/6.

9. What is 1/4 minus 6 d. equal to?
10. How much is 1/10 greater than 11 d.?
11. How much is 7 d. less than 1/1 ?
12. By how much is 1/9 greater than 11 d.?

13. From 1/11 take 10 d.
14. I have 1/2 and spend 7 d. How much is left?
15. Find the difference between 10 d. and 1/8.
16. How much more is 1/2 than 9 d.?

17. What must be added to 6 d. to make 1/1 ?
18. 1/8 minus 11 d. is equal to   .
19. Subtract 5 d. from 1/3.
20. By how much is 1/7 greater than 10 d.?

Lesson 37

Pence

s.	d.
12	4
	10
11	6

Think 10 d. from 4 d.

We cannot do it.

Add 1 s. to the top line.

Now, think 10 d. from 1 s. is 2 d.

2 d. + 4 d. = 6 d.   Write 6 d.

Shillings Remember to add 1 s. to bottom line.

Think 1 s. from 12 s.   Write 11 s.

s.	d.	s.	d.	s.	d.	s.	d.
17	1	9	$3\frac{1}{2}$	14	6	15	$2\frac{3}{4}$
8	9	3	4	7	7	8	3

£1 . 5 . 10

s.	d.	s.	d.	s.	d.	s.	d.
14	4	12	1	13	$2\frac{1}{4}$	11	1
5	7	2	2	7	5	5	11

s.	d.	s.	d.	s.	d.	s.	d.
15	1	16	$6\frac{3}{4}$	13	3	17	4
7	8	8	9	4	6	7	9

s.	d.	s.	d.	s.	d.	s.	d.
18	$5\frac{3}{4}$	14	3	13	4	13	2
1	6	6	11	4	10	7	6

Lesson 38

325	637	451	213
27	79	73	54
298	558	378	

545	853	744	917
59	58	79	88

326	257	613	524
67	89	27	49

415	363	233	913
69	65	69	44

644	836	4761	773
85	39	84	75

676	521	943	814
89	33	49	35

Subtraction again

613	363	837	426
335	178	649	267
278	185	188	

631	430	723	611
259	263	349	476

910	514	817	752
559	248	668	563

781	845	930	710
283	459	475	326

963	513	954	358
166	187	755	179

840	914	850	961
154	377	378	685

Lesson 40   *A writing exercise*

Write out the figures for these subtractions and then find their answers :

1. Subtract three thousand one hundred and seventy-six from six thousand four hundred and ninety-eight.
2. Find the difference between six thousand nine hundred and seventy-six and six thousand six hundred and twenty.
3. What must be added to eight thousand eight hundred and thirty-six to make eight thousand nine hundred and seventy-seven?

Finding proofs for subtractions

You remember that you can always find if a subtraction is correct by adding together the answer and the line above it and seeing if that answer is the same as the top line. Try these :

10	8	10	16	13	12	15
4	3	5	8	6	9	7

16	11	12	10	13	10	13
7	3	8	9	7	3	8

Lesson 41 *More problems*

1. At the seaside Mary counted 55 bathing huts with green stripes and 34 with red stripes. How many fewer huts had red stripes?
2. Mary saw a man with 14 donkeys. The next time she saw him there were only 7 donkeys left. How many were out being ridden?
3. Jack had 6/2 at the start of his holiday. In two weeks he spent 2/10. How much had he left?
4. Mary had 8/3. At the end of the holiday she had 5/7 left. How much had she spent?
5. Jack and Mary were collecting bus tickets. Jack had 257 and Mary had 335. How many tickets did Jack need in order to have the same number as Mary?

Turn back to page 71. How many additions can you do to-day in three minutes?

80

Lesson 42 *More subtractions*

Prove each answer by addition :

8274	5591	967	905
1719	2668	382	104
6555	2923	585	

5334	9434	705	981
1426	1517	301	517

9374	704	7190	789
2439	264	3722	263

7860	8595	5295	707
5947	4619	3839	303

4791	707	629	8778
1755	144	158	3233

6294	939	4253	814
1528	562	2428	233

81

Lesson 43 *Subtraction again*

Prove each answer by addition :

242	877	162	626
226	868	76	558
16	9	86	

334	953	115	23
317	946	38	18

561	853	1680	48
532	844	725	39

457	216	178	522
419	209	89	428

636	493	122	925
627	485	39	877

375	762	1392	625
356	759	673	568

Lesson 44 *Subtraction of length*

The subtractions on this page are worked just like those on page 76. See if you can do them.

ft.	in.	ft.	in.	ft.	in.	ft.	in.
9	1	10	0½	16	4	18	5
4	4	4	5	7	7	8	9
4	9.	5	7½				

ft.	in.	ft.	in.	ft.	in.	ft.	in.
9	2	11	6	9	0	17	2
8	7	4	9		2	8	9

ft.	in.	ft.	in.	ft.	in.	ft.	in.
10	3	9	0	8	2¼	11	2
2	6	7	6	5	8	3	4

ft.	in.	ft.	in.	ft.	in.	ft.	in.
8	4¾	10	1	4	2	9	1
1	9	3	5	3	4	5	7

Lesson 45 *Hidden questions*

In some problems there is a hidden question. We cannot find the answer to the problem until we have first answered the hidden question.

1. I bought an orange for 2 d., a box of dates for 4½ d., and a banana for 1½ d.
   What change did I get back out of 1/-?

(In this problem the hidden question is: "How much did I spend altogether?" I spent 8 d. altogether, so I got back 4 d. out of 1/-.)

Now, try these problems. They are quite easy.

2. I bought 3 d. worth of nuts, an apple costing 1 d. and a 4 d. pear. What change did I get out of 1/-?

3. Jean was trying to collect 100 shells. She had 45 in one box and 51 in another. How many shells did she still need?

4. Jim had 6 crayons in one box and 5 in another. His brother Tom had only 2 crayons. How many more crayons had Jim than Tom?

Lesson 46 *A page to climb on*

Subtract and prove each answer by addition:

364	831	8281	880
87	633	3857	841

942	523	704	534
84	225	261	498

630	612	5596	995
37	434	2757	986

846	832	938	132
48	355	493	87

471	941	504	71
85	355	302	62

652	644	8867	272
85	365	3928	178

1. Meg counted 8 stockings. One had fallen on the grass. How many could she see on the line?

2. Mary made toffee and cut it into 9 pieces. She gave one piece to each of her friends and had one piece left. How many friends had she?

3. In the greenhouse there were 67 panes of glass. A tree fell on it and only 9 panes were unbroken. How many new panes were needed?

4. Jack had a bunch with 13 grapes on it. How many were left after 9 of his friends had 1 grape each?

5. Mary should have had 21 stitches on her knitting needle. Mother found that she had only 18. How many had she dropped?

Turn back to page 52. How many quotients can you find to-day in three minutes?

Pupils' own test 16

Subtract :

234	547	8172	874
86	188	4813	826
824	862	7363	345
29	379	2349	267
632	856	802	773
66	557	141	766
772	611	463	122
86	213	292	28
471	363	709	92
29	168	203	87
322	648	6251	1366
74	279	1836	428

| Lesson 38 | Lesson 39 | Lesson 42 | Lesson 43 |

On this page you are to subtract.

How many can you do in three minutes?

482	817	5465	984
69	288	3548	918
213	923	8275	756
49	164	1456	678
531	834	904	574
38	467	181	566
355	952	757	110
67	665	494	11
830	932	605	46
42	276	402	37
943	622	8473	1773
89	168	6625	847

Ask your teacher if you may go on to the next chapter.

Chapter V   Multiplication

There are thirty-two boys and girls at this picnic. Meg wonders how many buns there are for tea.

"I brought three buns for each of you," said Miss Jones.

"Then there should be ninety-six buns in all," said Mary. "You can find the answer by multiplying. We are doing multiplications like that at school."

This chapter shows you multiplications like those that Mary could do.

Lesson 47 *A new kind of multiplying*

Look at the first line, and you will see what to do.

31	684	53	31	20
2	1	1	3	4
62	684	53	93	

302	78	312	110	301
2	1	3	4	3

10	43	19	57	201
3	1	1	1	1

410	329	322	110	33
2	1	3	5	3

520	101	354	403	516
1	5	1	2	1

34	430	202	102	10
2	1	3	4	5

1. The teacher tore up 3 notebooks in order to get loose sheets of paper. In each notebook there were 40 sheets. How many sheets did she get altogether?

2. Jim's classroom had 6 tables. There were 5 boys and girls working at each table. How many was that in all?

3. The bottom of this picture is 5 feet from the floor, and the picture is 2 feet high. If the room is 12 feet high, how far is the top of the picture from the ceiling?

4. A bookcase had 4 shelves with 22 books on each shelf. How many books were there?

5. Tom's mother let him make 4 bean-bags to play with. He put 20 beans in each bag. How many beans did he use altogether?

6. What are the missing quotients :

   $36 \div 9 =$. $81 \div 9 =$. $63 \div 9 =$.

52	421	63	703
3	4	3	3
156	1684	189	

920	30	32	643
2	5	4	2

501	62	921	702
5	4	3	4

82	41	71	842
2	5	5	2

521	611	722	93
3	4	4	2

911	92	310	910
5	4	5	4

If you do not remember what a *factor* is you must look again at page 38.

Write two factors for each of these numbers :

16,   15,   28,   12.

First, take 16. Two factors of 16 are 4 and 4, because $4 \times 4 = 16$. Two other factors of 16 are 2 and 8, because $2 \times 8 = 16$.

Write as many factors as you can for these numbers : 8,   21,   27,   45,   35.

Show your paper to your teacher.

Now write the products of these factors :

$9 \times 5 =$. $7 \times 3 =$. $6 \times 1 =$.
$5 \times 8 =$. $8 \times 9 =$. $9 \times 2 =$.
$1 \times 7 =$. $6 \times 5 =$. $2 \times 5 =$.

Write the missing factors :

$9 \times$ $= 54.$ $8 \times$ $= 32.$ $7 \times$ $= 14.$
$7 \times$ $= 35.$ $6 \times$ $= 12.$ $5 \times$ $= 25.$
$8 \times$ $= 64.$ $7 \times$ $= 56.$ $6 \times$ $= 48.$

See how many of the multiplications on pages 26 and 27 you can do to-day in three minutes.

Write the answers to these multiplications :

7 9	8 6	5 4	7 3
9 7	6 8	4 5	3 7

What do you notice about each pair of figures?
The answers to each pair are the same.

It does not matter whether we multiply the top line by the bottom one, or the bottom line by the top one.

It is useful to remember this, for it helps us to find out if our answers are correct.

If your answers are correct you will get the same answer to each pair of these multiplications.

5 2	8 3	6 9	9 8
2 5	3 8	9 6	8 9

4 7	9 0	3 4	7 8
7 4	0 9	4 3	8 7

8 5	7 6	4 9	5 0
5 8	6 7	9 4	0 5

Here are more multiplications in pairs.

See how quickly you can do them, remembering what you found out in the last lesson.

12 3	12 0	12 4	12 2
3 12	0 12	4 12	2 12

12 1	12 5	3 12	2 2
1 12	5 12	12 3	12 12

Now try these :

3	5	2	0	4	1	3
12	12	12	12	12	12	12

4	2	0	5	1	4	5
12	12	12	12	12	12	12

3	0	2	4	3	5	2
12	12	12	12	12	12	12

Another name for 12 is *one dozen*.

12×2 or 24 makes 2 dozen.

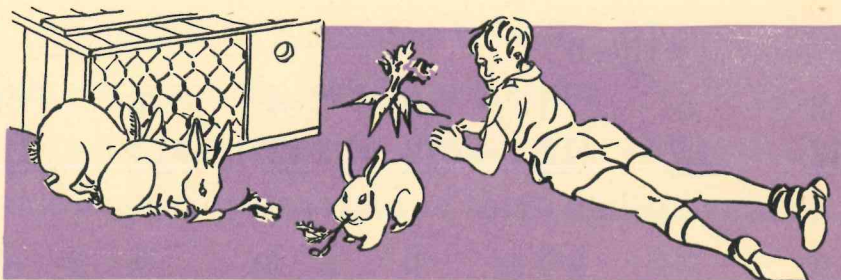12×3 or 36 makes 3 dozen.

Here are some puzzles which you can answer by *Yes* or *No*. Think them out carefully so that you can give a reason for your answer.

1. Jim bought one dozen carrots. He had 3 rabbits. Could he give 5 carrots to each one?

 (How many carrots did Jim buy?

 How many rabbits had he?

 Could he give 5 carrots to each one?) *Yes, No.*

2. Our teacher was cutting out dresses for three girls from a piece of cloth 7 yards long.

 Each dress took 2 yards of cloth.

 Would there be any cloth left? *Yes, No.*

3. The paper hats I wanted cost 1/- per dozen.

 I bought 5 dozen.

 Did I get any money back out of 5/-? *Yes, No.*

Here is something you will find very easy.

You remember how to write tens and hundreds. You know that three tens is written : 30, and nine tens is written : 90.

Write the figures for :

  ten tens,   eleven tens,   twelve tens.

Here is the same thing put in another way :

Multiply :

10	10	10	10	10
3	9	10	11	12

Now do these multiplications :

8	7	5	2	6	4
10	10	10	10	10	10

Tell your teacher why you think it is very easy to multiply by 10.

Now look at these divisions :

$$10\overline{)40} \quad 10\overline{)80} \quad 10\overline{)70} \quad 10\overline{)50} \quad 10\overline{)20}$$
$$\quad 4 \qquad\quad 8 \qquad\quad 7 \qquad\quad 5 \qquad\quad 2$$

Why is it easy to divide by 10 ? Do these :

$$10\overline{)30} \quad 10\overline{)90} \quad 10\overline{)60} \quad 10\overline{)100} \quad 10\overline{)110}$$

Eleven times table

Try these pairs of multiplications :

11	3		11	0		11	4		11	2
3	11		0	11		4	11		2	11

11	1		11	5		3	11		11	4
1	11		5	11		11	3		4	11

Now try these :

5	0	1	2	3	4	5
11	11	11	11	11	11	11

1	2	4	3	5	0	2
11	11	11	11	11	11	11

If you can find out, tell your teacher why you think these multiplications are easy.

Now look at these divisions :

11) 11	11) 22	11) 44	11) 33	11) 55
1	2	4	3	5

Now try these :

11) 22   11) 33   11) 0   11) 55   11) 44

Can you find the answers?

1. Meg's aunt had 4 brides-maids. Each bridesmaid carried 1 dozen tulips. How many tulips were there altogether?
2. We are to have 5 weeks' holiday. How many days' holiday do you think that will be?
3. Miss Brown gave each girl in her class 4 cards of sums. There were 50 girls in the class. How many cards did Miss Brown give out?
4. The teacher sent me to order 5 dozen oranges for the school party. How many oranges should the shopman have sent?
5. If one dozen eggs cost 1 s. 3 d., what will 2 dozen eggs cost.
6. What is 122 plus 333 plus 893 ?

Turn back to page 88. How many subtractions can you do to-day in three minutes?

Lesson 56 — *Multiplication*

410 × 3 = 1230	7004 × 2 = 14008	100 × 4 = 400	7064 × 1
803 × 2	820 × 3	8002 × 4	6303 × 3
3002 × 4	9082 × 1	702 × 2	930 × 3
700 × 1	7204 × 2	6002 × 3	3200 × 2
8021 × 4	9120 × 2	6022 × 4	303 × 3
640 × 2	9001 × 4	900 × 3	509 × 1

Lesson 57 — *Multiplication*

61 × 5 = 305	52 × 2 = 104	34 × 0 = 00	531 × 2
215 × 0	81 × 5	512 × 4	211 × 5
522 × 2	52 × 4	411 × 5	600 × 5
200 × 0	401 × 5	50 × 0	2100 × 5
501 × 4	302 × 0	504 × 4	41 × 5
6987 × 0	6011 × 5	401 × 0	8101 × 5

1. Jim got 6 d. from his father and a shilling from his uncle. When he had paid 4 d. each for Tom and himself to go to the pictures, how much would he have left?

2. Jessie has 6 d. each week for pocket money. She spends 3 d. a week. How long will it take her to save 1 s.?

3. Tom has a model farmyard. He has 34 horses, 59 sheep, and 23 cows. How many animals has he in all?

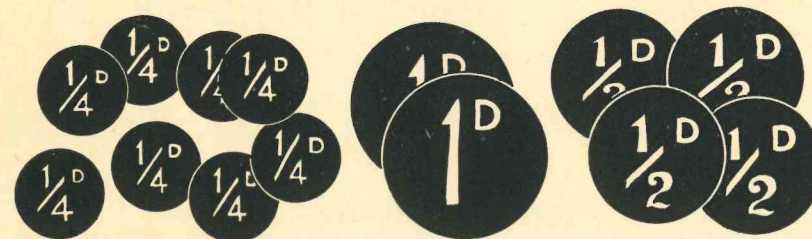4. The animals cost 3 d. each. He bought 2 s. worth yesterday. How many did he buy?

5. Mary did 44 sums yesterday and Jack did 41. To-day they did 90 between them. How many more did they do to-day than yesterday?

Lesson 58   *Something to do*

Count out eight farthings from the coin box. 8 farthings make 2 pennies, or 4 halfpennies.

Use the coins, if you need them, and find the answers to these questions.

1. How much are $\frac{3}{4}$ d. and $\frac{1}{2}$ d. altogether?
2. What is the sum of $\frac{1}{2}$ d. and $\frac{1}{2}$ d.?
3. What must be added to $\frac{1}{2}$ d. to make $1\frac{1}{4}$ d.?
4. 1 d. $-\frac{1}{2}$ d. $=$. $1\frac{1}{4}$ d. $-\frac{3}{4}$ d. $=$. $1\frac{1}{2}$ d. $-\frac{3}{4}$ d. $=$.
5. $\frac{1}{2}$ d. $+\frac{3}{4}$ d. $=$. $\frac{3}{4}$ d. $+\frac{3}{4}$ d. $=$. $\frac{1}{4}$ d. $+\frac{3}{4}$ d. $=$.
6. How much is left if I subtract $\frac{3}{4}$ d. from 1 d.?
7. One penny minus one farthing equals :
8. $\frac{1}{2}$ d. $+\frac{1}{2}$ d. $=$. $\frac{3}{4}$ d. $+\frac{1}{2}$ d. $=$. $\frac{3}{4}$ d. $+\frac{1}{4}$ d. $=$.
9. 1 d. $-\frac{3}{4}$ d. $=$. $1\frac{1}{4}$ d. $-\frac{1}{2}$ d. $=$. 1 d. $-\frac{1}{4}$ d. $=$.
10. Find the difference between $1\frac{1}{4}$ d. and $\frac{3}{4}$ d.
11. 3 farthings plus 3 farthings equals   d.
12. One penny minus one halfpenny equals   .

Lesson 59 — *Add on this page*

s. d.
4 $3\frac{3}{4}$ *Farthings* Think $\frac{3}{4}$ d. + $\frac{1}{2}$ d. = $1\frac{1}{4}$ d.
                  Write $\frac{1}{4}$ d.   Remember 1 d.
8 $2\frac{1}{2}$ *Pence*   Think 1 + 3 + 2 = 6.
12 $6\frac{1}{4}$ Write 6 d.
                  Shillings Think 4 + 8 = 12. Write 12 s.

Notice how we write the next answers:

s. d.	s. d.	s. d.	s. d.
2 $1\frac{1}{2}$	8 $2\frac{1}{2}$	$4\frac{1}{2}$	2 $1\frac{3}{4}$
7 $2\frac{1}{2}$	5 $2\frac{3}{4}$	7 $2\frac{1}{2}$	8 $3\frac{1}{4}$
9 4	13 $5\frac{1}{4}$		

s. d.	s. d.	s. d.	s. d.
1 $8\frac{1}{2}$	7 $0\frac{3}{4}$	$5\frac{3}{4}$	5 $2\frac{3}{4}$
7 $2\frac{1}{2}$	6 $2\frac{1}{2}$	8 $2\frac{1}{2}$	9 $3\frac{3}{4}$

s. d.	s. d.	s. d.	s. d.
3 $4\frac{3}{4}$	5 $6\frac{1}{4}$	6 $3\frac{1}{2}$	1 $7\frac{1}{2}$
7 $3\frac{1}{2}$	8 $2\frac{3}{4}$	7 $3\frac{3}{4}$	9 $3\frac{1}{2}$

s. d.	s. d.	s. d.	s. d.
4 $8\frac{1}{2}$	$5\frac{1}{4}$	3 $0\frac{1}{2}$	2 $2\frac{1}{2}$
7 $0\frac{3}{4}$	9 $3\frac{3}{4}$	8 $3\frac{1}{2}$	9 $4\frac{1}{2}$

Subtract on this page :

s. d.	s. d.	s. d.	s. d.
11 $7\frac{1}{4}$	12 3	10 $8\frac{1}{4}$	15 $5\frac{1}{2}$
3 $5\frac{1}{2}$	7 $2\frac{1}{2}$	9 $4\frac{3}{4}$	8 $3\frac{3}{4}$
8 $1\frac{3}{4}$	5 $0\frac{1}{2}$	1 $3\frac{1}{2}$	

s. d.	s. d.	s. d.	s. d.
11 5	17 9	12 $8\frac{1}{4}$	10 9
5 $0\frac{3}{4}$	9 $8\frac{1}{4}$	5 $5\frac{1}{2}$	8 $4\frac{1}{2}$

s. d.	s. d.	s. d.	s. d.
16 $7\frac{1}{4}$	13 $8\frac{1}{4}$	12 $2\frac{1}{4}$	14 4
9 $1\frac{3}{4}$	6 $0\frac{3}{4}$	4 $1\frac{1}{2}$	9 $2\frac{3}{4}$

s. d.	s. d.	s. d.	s. d.
11 $7\frac{1}{4}$	15 7	18 $8\frac{1}{2}$	13 5
8 $6\frac{1}{2}$	7 $0\frac{1}{2}$	9 $6\frac{3}{4}$	8 $1\frac{3}{4}$

s. d.	s. d.	s. d.	s. d.
13 7	15 $8\frac{1}{2}$	11 3	10 $9\frac{1}{4}$
4 $3\frac{1}{2}$	9 $7\frac{3}{4}$	7 $0\frac{1}{4}$	7 $7\frac{3}{4}$

(For revision and tests in money and length, see Book Two, Part Two.)

Lesson 60   *Which is the correct answer?*

Here is something new. Find the right answer to each question and copy it in your book.

How many pennies are in 1/- ?   10, *12*, 6, 4.

         12 is the correct answer.

1. How many inches in 1 ft.?   14, 10, 12, 3.
2. What part of 1 s. is 6 d.? $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$.
3. How many farthings in 1 d.?   3, 2, 6, 4.
4. What is 6 d. plus 8 d.?   1/-, 1/2, 2/3, 2 d.
5. What does d. mean?   Shilling, Foot, Penny, Farthing.
6. What does in. mean?   Foot, Inch, Penny, Shilling.
7. What is 1/6 minus 11 d.?   2/5, 1/-, 7 d., 6 d.
8. What does ÷ mean?   Add, Subtract, Multiply, Divide.
9. How many 3 d. in 1/-?   4, 3, 6, 12.
10. What is the name for one-quarter of a penny?   Halfpenny, Farthing, Three-farthings.
11. $81 \div 9 =$ 7, 9, 8, 4.

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Lesson 61   *A missing number game*

$21 + 6 =$.	$63 + 2 =$.	$24 + 2 =$.
$63 + 6 =$.	$72 + 2 =$.	$63 + 3 =$.
$63 + 5 =$.	$36 + 3 =$.	$42 + 7 =$.
$32 + 7 =$.	$55 + 4 =$.	$28 + 1 =$.
$21 + 7 =$.	$25 + 2 =$.	$42 + 4 =$.
$64 + 2 =$.	$63 + 4 =$.	$32 + 3 =$.
$45 + 3 =$.	$72 + 7 =$.	$77 + 2 =$.
$81 + 8 =$.	$33 + 6 =$.	$96 + 2 =$.
$54 + 5 =$.	$21 + 8 =$.	$12 + 3 =$.
$44 + 3 =$.	$32 + 4 =$.	$33 + 4 =$.
$35 + 3 =$.	$64 + 5 =$.	$11 + 7 =$.
$77 + 2 =$.	$48 + 1 =$.	$64 + 5 =$.

Fill in the missing products :

$4 \times 12 =$.	$0 \times 12 =$.	$3 \times 12 =$.
$5 \times 12 =$.	$2 \times 12 =$.	$4 \times 12 =$.

Fill in the missing factors :

$3 \times = 36.$	$5 \times = 60.$	$1 \times = 12.$
$2 \times = 24.$	$ \times 12 = 0.$	$ \times 12 = 60.$
$ \times 12 = 36.$	$ \times 12 = 24.$	$ \times 12 = 48.$

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Lesson 62 *Multiplication again*

```
 26   Units   Think 6 × 3 = 18.
  3           Write 8.  Remember 1 ten.
 78   Tens    Think 2 × 3 = 6.  Add 1.
              Write 7.
```

```
 25        238        116        228
  3          2          4          3
 75        476        464
```

```
316        112        224        135
  3          5          3          2
```

```
 14        227        139        113
  5          2          2          5
```

```
438         18        319        224
  2          5          2          4
```

```
336        218        217        115
  2          4          3          5
```

Lesson 63 *More multiplications*

```
 517        717       3117       4012
   5          3          4          5
2585       2151      12468
```

```
 728       9213       6026        617
   2          4          3          5
```

```
 618        637        715        423
   4          2          5          4
```

```
 916        725        815        425
   2          2          4          3
```

```
 617       7128       5018        819
   5          3          5          4
```

```
7016       8319        849       9113
   4          3          2          5
```

Lesson 64 *Yes, No, puzzles*

1. Twenty boys were ready to play at rounders. Could they make 2 teams of 11 boys each?

   (How many boys were ready to play?

   How many boys were needed to make 2 teams? Could they make 2 teams of 11 boys each?)

   Yes, No.
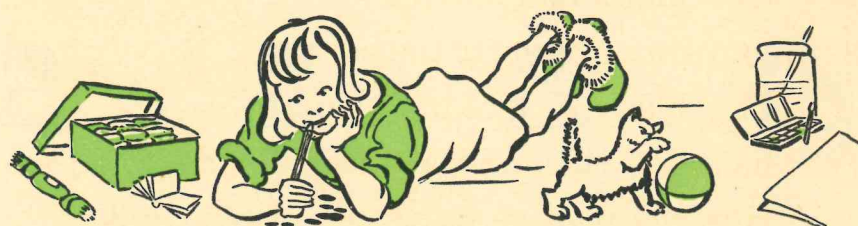
2. Susan got 2 s. from her uncle at Christmas. She bought a shilling box of crackers and a sixpenny ball. Had she enough left to buy threepennyworth of sweets? *Yes, No.*

3. There were 15 potatoes left in the basket. Was that enough to give 5 of us 3 each for dinner?

   Yes, No.

4. Jessie had 1 s. to buy ribbon. Had she enough to buy 5 yards at 2 d. per yard? *Yes, No.*

Lesson 65 *More hidden questions*

1. Tom has 2 paint boxes, and Meg has only 1 box. Each box has 10 tubes in it. How many tubes less has Meg than Tom?

2. Mary bought 3 dozen candles for the school party. She put 5 on each of the 7 tables. How many had she left?

3. 40 boys are coming to the party. The class is making paper hats for them. They have made 3 dozen. How many more have they still to make?

4. Our egg box holds 30 eggs. Mother put in 2 dozen. How many more would it hold?

5. Jim is collecting bus tickets. He has 34 in one pocket and 23 in another. Tom has only 54 altogether. How many fewer has Tom?

6. Jack's class got 4 bundles of pencils with one dozen in each bundle. How many pencils was that?
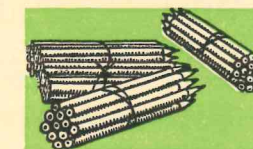
   How many divisions on pages 52 and 53 can you do to-day in three minutes?

Lesson 66 *A page to climb on*

Multiply :

61	4120	6002	515
2	3	5	5

510	3004	900	124
5	2	0	3

320	7001	21	518
4	3	5	2

31	5021	410	517
5	3	5	3

202	5246	8001	518
2	1	5	4

701	8012	4009	414
3	4	0	5

On the next page is a test for you.

Multiply :

74	8012	4001	113
2	4	0	5

820	3203	8011	215
4	2	5	3

90	3220	411	114
3	4	5	5

62	4001	511	227
2	2	4	3

402	7002	6110	214
2	3	5	4

71	6320	8021	623
5	2	0	4

Lessons 47 and 48	Lesson 56	Lesson 57	Lessons 62 and 63

On this page you are to multiply.

How many can you do in three minutes?

820 4	7403 2	4200 0	115 5
63 3	9001 5	5013 2	124 4
302 2	6210 4	2013 0	118 5
62 4	6004 2	4110 5	112 5
60 2	923 3	6100 5	817 4
91 5	5012 3	530 2	223 4

Ask your teacher if you may go on to the next chapter.

Chapter VI — Division

This is a corner of Jessie's garden.

Her mother has given her daffodil bulbs to put in her garden.

" I want to put them in groups with 4 bulbs in each group," said Jessie.

" I wonder how many groups I can make."

When she counted the bulbs she found there were forty-eight.

How many groups could she make?

You can find the answer by dividing.

This chapter will show you how to do it.

Lesson 67 *A division reading game*

You have solved this kind of problem before. This time they are in words and not in numbers.

1. What is one-third of six? This means :
   What is $\frac{1}{3}$ of 6 ? How many 3's are in 6 ?
   What is 6 divided by 3 ? $6 \div 3$.
   The answer is two (2).
2. What is one-sixth of forty-two?
3. What is one-eighth of twenty-four?
4. What is one-fifth of fifteen?
5. What is one-half of fourteen?

6. One-seventh of twenty-eight is   .
7. One-ninth of thirty-six is   .
8. One-fourth of twenty-four is   .
9. What is one-third of twenty-one?

10. What is one-seventh of forty-nine?
11. What is one-sixth of thirty?
12. One-eighth of fifty-six is   .
13. One-fifth of thirty is   .

14. One-quarter of thirty-six is   .
15. What is one-ninth of seventy-two?

Lesson 68 *Division*

Look at the top line and you will see how to do these divisions. They are easy.

$2\overline{)62}$	$5\overline{)55}$	$3\overline{)96}$	$4\overline{)84}$	$2\overline{)642}$
31	11	32		

$1\overline{)45}$	$3\overline{)39}$	$4\overline{)44}$	$9\overline{)99}$	$4\overline{)848}$

$3\overline{)63}$	$2\overline{)46}$	$1\overline{)23}$	$3\overline{)66}$	$4\overline{)488}$

$8\overline{)88}$	$2\overline{)28}$	$6\overline{)66}$	$2\overline{)44}$	$2\overline{)224}$

$3\overline{)33}$	$2\overline{)66}$	$2\overline{)88}$	$5\overline{)55}$	$7\overline{)777}$

$3\overline{)93}$	$3\overline{)69}$	$4\overline{)88}$	$2\overline{)48}$	$2\overline{)688}$

$3\overline{)36}$	$2\overline{)42}$	$3\overline{)99}$	$4\overline{)48}$	$5\overline{)555}$

$2\overline{)42}$	$9\overline{)99}$	$1\overline{)89}$	$2\overline{)64}$	$9\overline{)999}$

Lesson 69 *Division again*

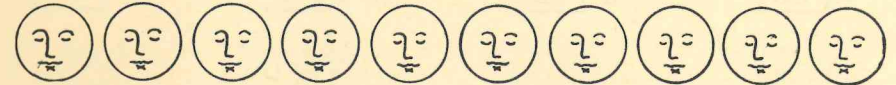|			
3) 906	5) 505	9) 990	4) 808
302	101	110	
6) 606	3) 930	2) 804	9) 909
3) 309	7) 7077	5) 550	2) 208
7) 770	3) 903	2) 680	5) 500
3) 303	4) 408	6) 600	2) 200
2) 480	3) 690	6) 660	9) 900
4) 440	7) 700	3) 300	4) 800
8) 800	9) 990	4) 400	8) 808

Lesson 70 *Something to do*

" What is $\frac{1}{3}$ of 21 ? " means, " How many 3's are in 21 ? " or " What is 21 divided by 3 ? "

" Take $\frac{1}{5}$ of ten " means: " Divide 10 into 5 equal groups and take one of these equal groups."

1. Here are ten moons.
   Copy them and shade $\frac{1}{5}$ of them quite black.

2. Here are a dozen owls. Copy $\frac{1}{6}$ of them.

3. Here are 9 guinea pigs. Copy $\frac{1}{3}$ of them.

4. Copy $\frac{1}{4}$ of this row of 8 trees.

5. There are 4 beds here. Copy $\frac{1}{2}$ of them.

Lesson 71

More divisions

Be sure to put each answer in the right place.

2) 18	3) 213	4) 208	7) 147
9	71	52	
7) 357	8) 328	9) 189	5) 355
9) 819	2) 168	5) 455	2) 106
3) 2766	6) 246	7) 217	9) 279
7) 4277	5) 155	9) 459	3) 159
8) 728	6) 186	7) 4977	2) 124
4) 324	5) 205	4) 1284	8) 6488
6) 426	4) 2888	9) 729	7) 2877

Lesson 72

Divide on this page

6) 3606	8) 400	7) 4207	3) 1209
601	50	601	
5) 1005	8) 2408	4) 1608	7) 560
9) 6300	8) 480	5) 300	4) 2404
6) 1260	2) 1400	8) 560	5) 150
4) 3640	6) 480	9) 3600	3) 2409
2) 1602	4) 3200	6) 2400	7) 4900
5) 3005	3) 2100	2) 1802	4) 2800
6) 1800	5) 3500	9) 1800	5) 1005

Lesson 73 *Can you find the answers*

1. There are fifty boys and girls in our class. The teacher told us to-day that one-fifth had taken no milk. How many was that?
2. Somebody says that out of thirty-six children in the Infant Room, one-sixth have measles. How many have measles?
3. Mr. Smith was dividing the class into teams. He said that Tom might pick a quarter of the class for his team. There were forty-four pupils in all. How many were in Tom's team?
4. The shopman told Mary that peppermints cost 8d. per lb. What would she pay for $\frac{1}{4}$ lb.?
5. Uncle John said we could each take one-third of the chocolates he had bought. When we counted the chocolates we found there were twenty-four. How many did we each get?
6. Our school has a dozen new pictures. The Headmaster says that our class is to get one-fourth of them. How many shall we get?
7. Someone sent our school 240 apples. Our class got $\frac{1}{6}$. How many did we get?

Lesson 74 *More divisions*

Be very careful on this page.

$3 \overline{)\ 924}$	$5 \overline{)\ 535}$	$4 \overline{)\ 1612}$	$6 \overline{)\ 654}$
308	107	403	
$2 \overline{)\ 818}$	$5 \overline{)\ 520}$	$9 \overline{)\ 954}$	$6 \overline{)\ 630}$
$7 \overline{)\ 763}$	$6 \overline{)\ 1824}$	$8 \overline{)\ 4832}$	$2 \overline{)\ 414}$
$4 \overline{)\ 824}$	$7 \overline{)\ 3521}$	$3 \overline{)\ 1827}$	$8 \overline{)\ 856}$
$5 \overline{)\ 2510}$	$9 \overline{)\ 6345}$	$4 \overline{)\ 420}$	$7 \overline{)\ 728}$
$8 \overline{)\ 2416}$	$2 \overline{)\ 1816}$	$6 \overline{)\ 1242}$	$9 \overline{)\ 927}$
$4 \overline{)\ 3228}$	$9 \overline{)\ 3654}$	$3 \overline{)\ 615}$	$8 \overline{)\ 872}$
$2 \overline{)\ 612}$	$5 \overline{)\ 4535}$	$7 \overline{)\ 5649}$	$3 \overline{)\ 321}$

Lesson 75 *A reading puzzle*

1. What is the sum of four and eight?
2. What is the fourteen minus seven?
3. What is the product of nine and nine?
4. What is the quotient when sixty-three is divided by nine?
5. Nine plus two is   .
6. The product of seven and three is   .
7. The quotient when we divide fifty-six by seven is   .
8. The difference between twelve and eight is   .
9.   is the product of six and five.
10. Eight is the sum of five and   .
11. Two is the difference between ten and   .
12.   is the quotient of forty-eight divided by six.
13. What is the product of two hundred and forty-nine and two?
14. One half of eighteen is   .

See how many of the multiplications on page 114 you can do to-day in three minutes.

At the picnic

1. There were 36 girls altogether at the picnic. They went by bus. Each seat held six. How many seats did they need?
2. Thirty-three of the girls played rounders. If eleven girls played in each team, how many teams were there?
3. How many girls did not play rounders?
4. The thirty-six girls brought 3 baskets of food. How many girls shared each basket?
5. Twenty girls ran three-legged races. How many pairs were there?
6. In the fields they counted 8 lambs with their mothers. If each sheep had 2 lambs, how many sheep must there have been?
7. The sheep were eating turnip. In one field they saw them get six loads and in another seven loads.

   How many was that altogether?

Lesson 76

A page to climb on

2) 26	5) 500	3) 159	4) 432
2) 84	4) 404	5) 155	9) 918
3) 99	9) 900	4) 364	7) 714
2) 68	7) 770	6) 486	5) 535
2) 82	6) 600	7) 637	3) 924
4) 84	8) 8008	9) 639	2) 416
2) 22	3) 9009	8) 488	6) 642
9) 99	7) 700	4) 328	8) 864

On the next page is a test for you.

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Pupils' own test 18

3) 966	4) 440	7) 357	2) 412
4) 8488	2) 406	5) 305	6) 6546
2) 422	3) 3096	6) 126	5) 1535
3) 396	5) 5055	4) 168	7) 749
8) 888	2) 820	2) 186	3) 927
4) 444	3) 690	8) 568	9) 945
2) 284	4) 8088	3) 219	8) 8328
9) 999	2) 860	9) 2799	4) 428

Lesson 68	Lesson 69	Lesson 71	Lesson 74

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A page to race on

How many can you do in three minutes?

3) 393	4) 804	5) 3555	9) 918
4) 8884	9) 9909	4) 284	2) 616
2) 242	3) 930	6) 306	7) 7637
7) 777	4) 480	2) 144	3) 621
4) 844	2) 802	9) 1899	8) 840
2) 622	8) 808	3) 156	4) 816
4) 4848	2) 420	7) 427	5) 2545
3) 936	3) 603	8) 7288	6) 624

Ask if you may go on to the next part of the book.